

# TREATMENT PERFORMANCE RESULTS

## Biocycle Ltd.

Unit 107, Baldoye Industrial Estate, Dublin 13, Ireland

### EN 12566-3 Annex B

Results corresponding to EN 12566-3 and S.R. 66

PIA-SR66-1602-1022.02, shared itt

### bioCycle 12,000 series

BAF Biological Aerated Filter in Carlow concrete tanks (Initial type test)

|  |                        |                    |                 |
|--|------------------------|--------------------|-----------------|
| Nominal organic daily load               | 0.41 kg/d              |                    |                 |
| Nominal hydraulic daily load             | 1.60 m <sup>3</sup> /d |                    |                 |
| Treatment efficiency (nominal sequences) |                        | Efficiency         | Effluent        |
|  |                        | COD                | 92.1 % 50. mg/l |
|  |                        | BOD <sub>5</sub>   | 97.5 % 6 mg/l   |
|  |                        | NH <sub>4</sub> -N | 85.6 % 4.2 mg/l |
|  |                        | SS                 | 97.0 % 8 mg/l   |
| Number of desludging                     | Not more than once     |                    |                 |
| Electrical consumption                   | 2.0 kWh/d              |                    |                 |

Performance tested by:

### PIA – Prüfinstitut für Abwassertechnik GmbH

(PIA GmbH)

Hergenrather Weg 30

52074 Aachen, Germany

This document replaces neither the declaration of performance nor the CE marking.



Notified Body  
No.: 1739



Certified according to  
ISO 9001:2008



Prüfinstitut für Abwassertechnik GmbH  
*Martina Wermter*  
geprüft - tested - teste

Martina Wermter

July 2019



Prüfinstitut für  
Abwassertechnik  
GmbH

## PERFORMANCE RESULTS

### McGrath Quarries

O'Callaghans Mills, Co. Clare, Ireland

### EN 12566-3 Annex A and C

Results corresponding to EN 12566-3 and S.R. 66

PIA-SR66-1602-1022.02, shared itt

### 1800gal tank, 660gal HEX tank (McGrath concrete tanks)

Concrete Tanks in combination with biocycle treatment kit  
(BAF Biological Aerated Filter process)

|   |                            |
|---|----------------------------|
| Material                                  | Concrete                   |
| Watertightness                            | Pass                       |
| Structural behaviour (vertical load test) | Pass (also wet conditions) |
| Durability                                | Pass                       |

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Deutsche  
Akkreditierungsstelle  
D-PL-17712-01-00

Prüfinstitut für Abwassertechnik GmbH  
geprüft - tested - teste

Daniel Verschitz

July 2019



Prüfinstitut für  
Abwassertechnik  
GmbH

# PERFORMANCE RESULTS

## PPR Carlow Concrete Tanks

Drumberry, Bunclody, Co. Wexford, Ireland

## EN 12566-3 Annex A and C

Results corresponding to EN 12566-3 and S.R. 66

PIA-SR66-1602-1022.02

## 2500 gallons, 3500gallons Carlow Concrete Tanks

Concrete Tanks in combination with biocycle treatment kit  
(BAF Biological Aerated Filter process)

|   |                            |
|---|----------------------------|
| Material                                  | Concrete                   |
| Watertightness                            | Pass                       |
| Structural behaviour (vertical load test) | Pass (also wet conditions) |
| Durability                                | Pass                       |

Performance tested by:

### PIA – Prüfinstitut für Abwassertechnik GmbH

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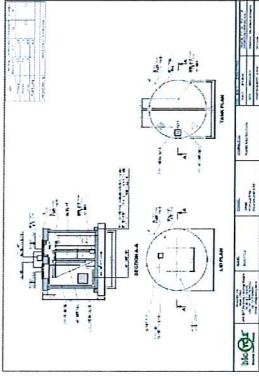
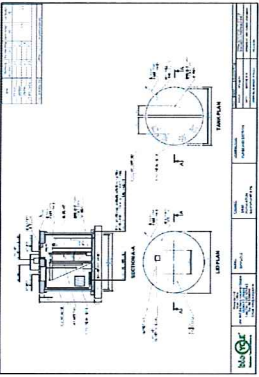
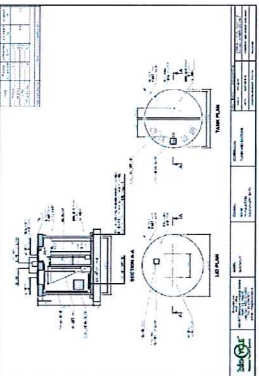
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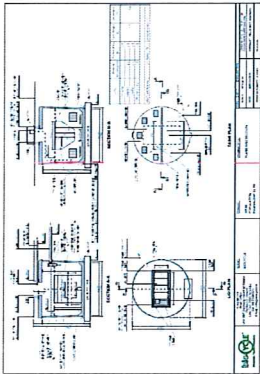
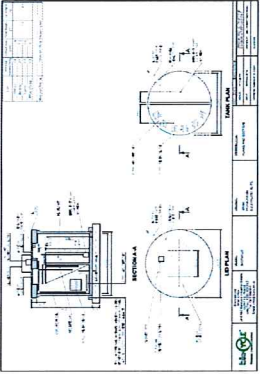
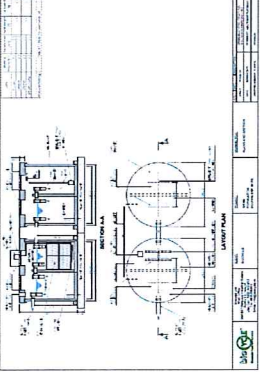
Daniel Verschitz

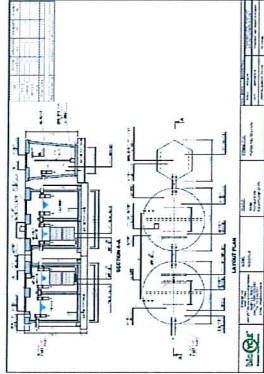
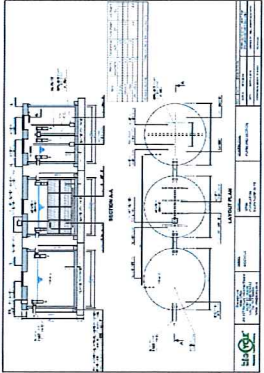
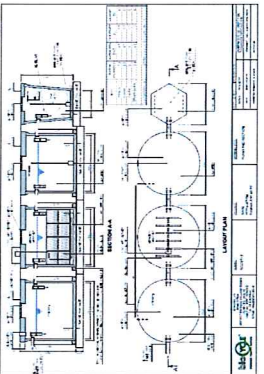
July 2019

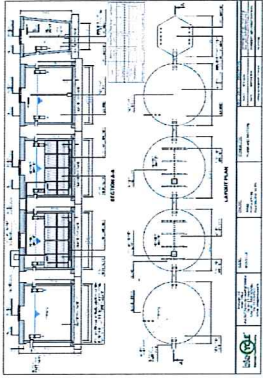
biocycle 12,000 series range shared ITT and its referring test reports:

| Population equivalent (PE)<br>Daily hydr. flow | Drawing of model of the range   | Watertightness (EN 12566-3 Annex A) | Treatment Efficiency (EN 12566-3 Annex B)          | Structural Behaviour (EN 12566-3 Annex C)   | Durability                      |
|--|---|-------------------------------------|--|---|---------------------------------|
| 6<br>900 l/d                                   |    | Pass<br>PIA2012-WD-1203-1017        | Pass<br>Range conformity according to S.R. 66:2015 | Pass<br>For wet ground conditions, 1.48 m installation depth from inlet invert                                  | Pass<br>PIA2016-DH-1601-1003.01 |
| 8<br>1,200 l/d                                 |   | Pass<br>PIA2012-WD-1203-1017        | Pass<br>Range conformity according to S.R. 66:2015 | Pass<br>For wet ground conditions, 1.48 m installation depth from inlet invert                                  | Pass<br>PIA2016-DH-1601-1003.01 |
| 10<br>1,500 l/d                                |  | Pass<br>PIA2013-WD-1304-1024        | Pass<br>Range conformity according to S.R. 66:2015 | Pass<br>PIA2013-ST-BT-1304-1024b<br>For wet ground conditions also, 0.80 m installation depth from inlet invert | Pass<br>PIA2016-DH-1602-1022.01 |



| Population equivalent (PE)<br>Daily hydr. flow                          | Drawing of model of the range   | Watertightness (EN 12566-3 Annex A) | Treatment Efficiency (EN 12566-3 Annex B)              | Structural Behaviour (EN 12566-3 Annex C)  | Durability                          |
|---|---|-------------------------------------|--|--|-------------------------------------|
| Initial Type Test (ITT treatment efficiency)<br><br>11<br><br>1,650 l/d |    | Pass<br><br>PIA2007-0710-WD-1012    | Pass<br><br>PIA2008-065B10                             | Pass<br><br>For wet ground conditions, 1.48 m installation depth from inlet invert | Pass<br><br>PIA2016-DH-1601-1003.01 |
| 12<br><br>1,800 l/d   |   | Pass<br><br>PIA2012-WD-1203-1017    | Pass<br><br>Range conformity according to S.R. 66:2015 | Pass<br><br>For wet ground conditions, 1.48 m installation depth from inlet invert | Pass<br><br>PIA2016-DH-1601-1003.01 |
| 16<br><br>2,400 l/d   |  | Pass<br><br>PIA2012-WD-1203-1017    | Pass<br><br>Range conformity according to S.R. 66:2015 | Pass<br><br>For wet ground conditions, 1.48 m installation depth from inlet invert | Pass<br><br>PIA2016-DH-1601-1003.01 |

| Population equivalent (PE)<br>Daily hydr. flow | Drawing of model of the range   | Watertightness (EN 12566-3 Annex A)                          | Treatment Efficiency (EN 12566-3 Annex B)              | Structural Behaviour (EN 12566-3 Annex C)  | Durability   |
|--|---|--|--|--|--|
| 20<br>3,000 l/d                                |    | Pass<br><br>PIA2012-WD-1203-1017<br><br>PIA2019-WD-1905-1031 | Pass<br><br>Range conformity according to S.R. 66:2015 | Pass<br><br>For wet ground conditions, 1.48 m installation depth from inlet invert | Pass<br><br>PIA2016-DH-1601-1003.01<br><br>PIA2016-DH-1602-1022.01 |
| 30<br>4,500 l/d                                |   | Pass<br><br>PIA2012-WD-1203-1017                             | Pass<br><br>Range conformity according to S.R. 66:2015 | Pass<br><br>For wet ground conditions, 1.48 m installation depth from inlet invert | Pass<br><br>PIA2016-DH-1601-1003.01                                |
| 40<br>6,000 l/d                                |  | Pass<br><br>PIA2012-WD-1203-1017<br><br>PIA2019-WD-1905-1031 | Pass<br><br>Range conformity according to S.R. 66:2015 | Pass<br><br>For wet ground conditions, 1.48 m installation depth from inlet invert | Pass<br><br>PIA2016-DH-1601-1003.01<br><br>PIA2016-DH-1602-1022.01 |

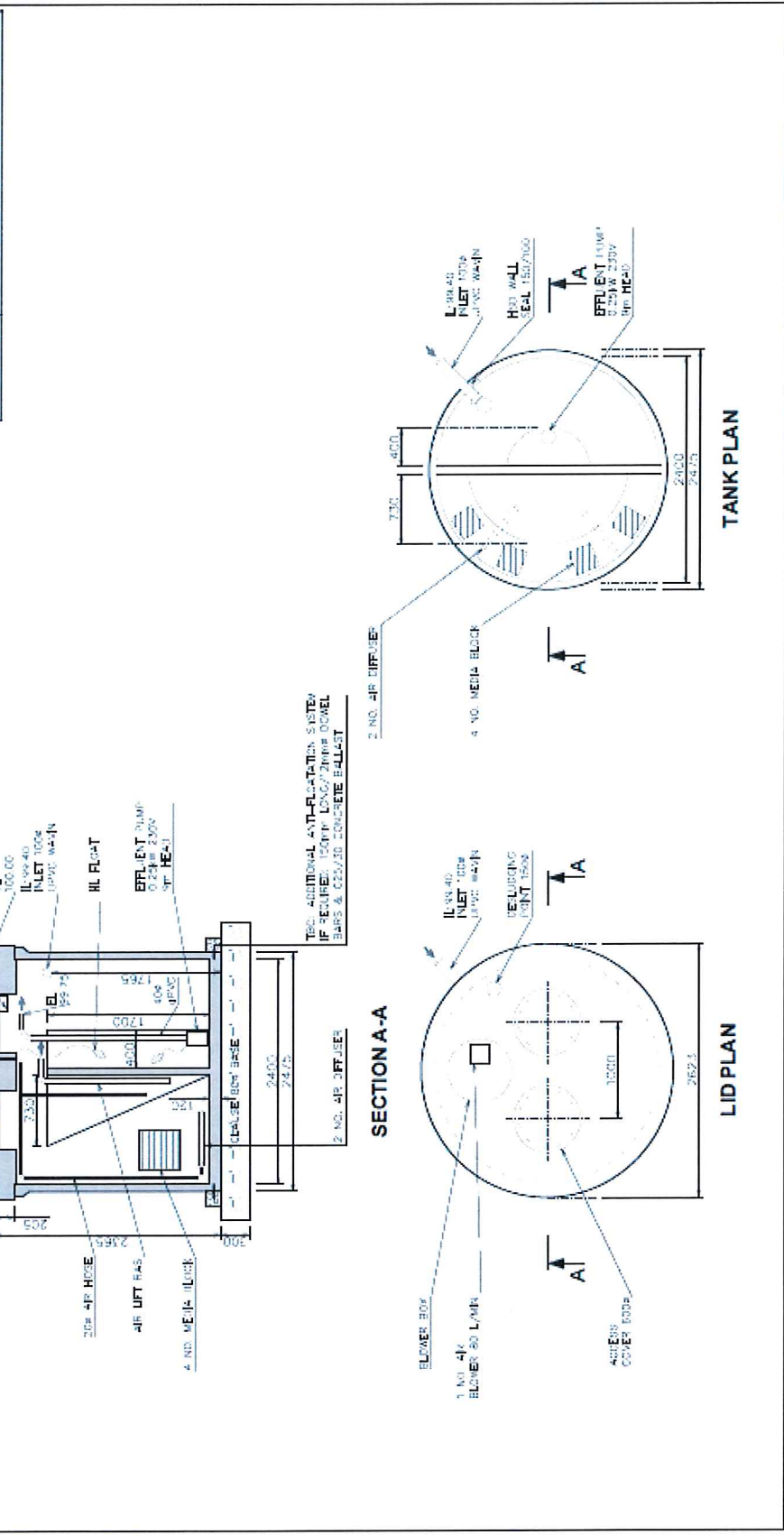
| Population equivalent (PE)<br>Daily hydr. flow | Drawing of model of the range   | Watertightness (EN 12566-3 Annex A)                          | Treatment Efficiency (EN 12566-3 Annex B)              | Structural Behaviour (EN 12566-3 Annex C)  | Durability   |
|--|---|--|--|--|--|
| 50<br>7,500 l/d                                |  | Pass<br><br>PIA2012-WD-1203-1017<br><br>PIA2019-WD-1905-1031 | Pass<br><br>Range conformity according to S.R. 66:2015 | Pass<br><br>PIA2009-ST-AT0710-1012<br><br>For wet ground conditions, 1.48 m installation depth from inlet invert | Pass<br><br>PIA2016-DH-1601-1003.01<br><br>PIA2016-DH-1602-1022.01 |





| 8PE           | Working Volume [m <sup>3</sup> ] | Surface Area [m <sup>2</sup> ] | Tank Weight [t] | Lid Weight [t] |
|---------------|----------------------------------|--------------------------------|-----------------|----------------|
| Primary       | 3.1                              | 2.0                            |                 |                |
| Aeration      | 2.7                              | 1.4                            | 5.5             | 2.2            |
| Clarifier     | 0.7                              | 0.9                            |                 |                |
| Effluent Sump | 0.4                              | 0.3                            |                 |                |

Box load bearing: 100kN/m<sup>2</sup> UDL for 1m overcure-DL



| REV.            | DATE       | DESCRIPTION  |
|-----------------|------------|--|
| SCALE           | NTS @ A4   | DRAWING STATUS: DRAFT FOR DISCUSSION PURPOSES ONLY |
| DATE            | MARCH 2019 | DRAWN BY: WALDEMAR DEBOWSKI                        |
| DRAWING NUMBER: | 31-4-002   | REVISION:  |

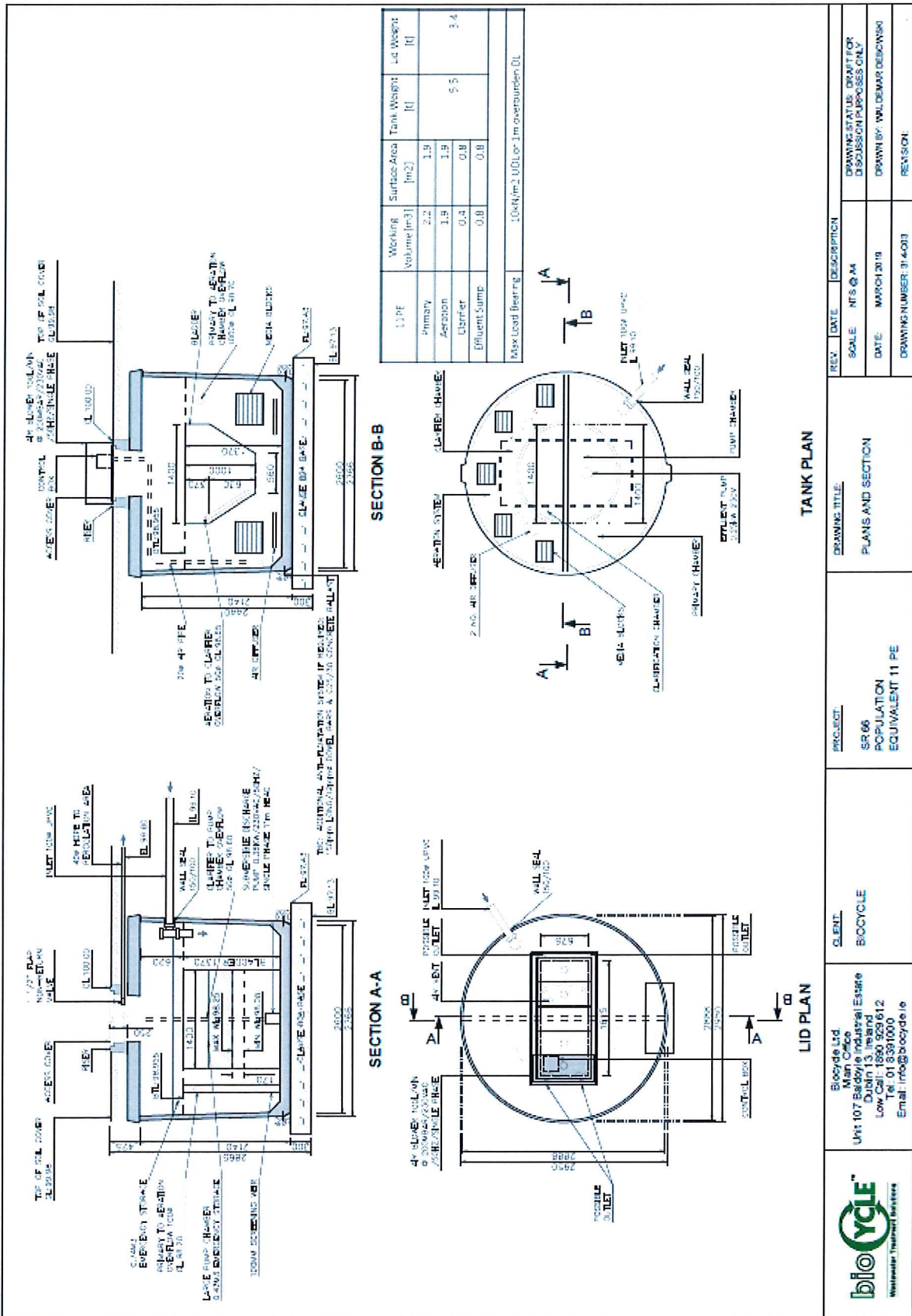
**DRAWING TITLE:** PLANS AND SECTION

**PROJECT:** SR66 POPULATION EQUIVALENT 8 PE

**CLIENT:** BIOCYCLE

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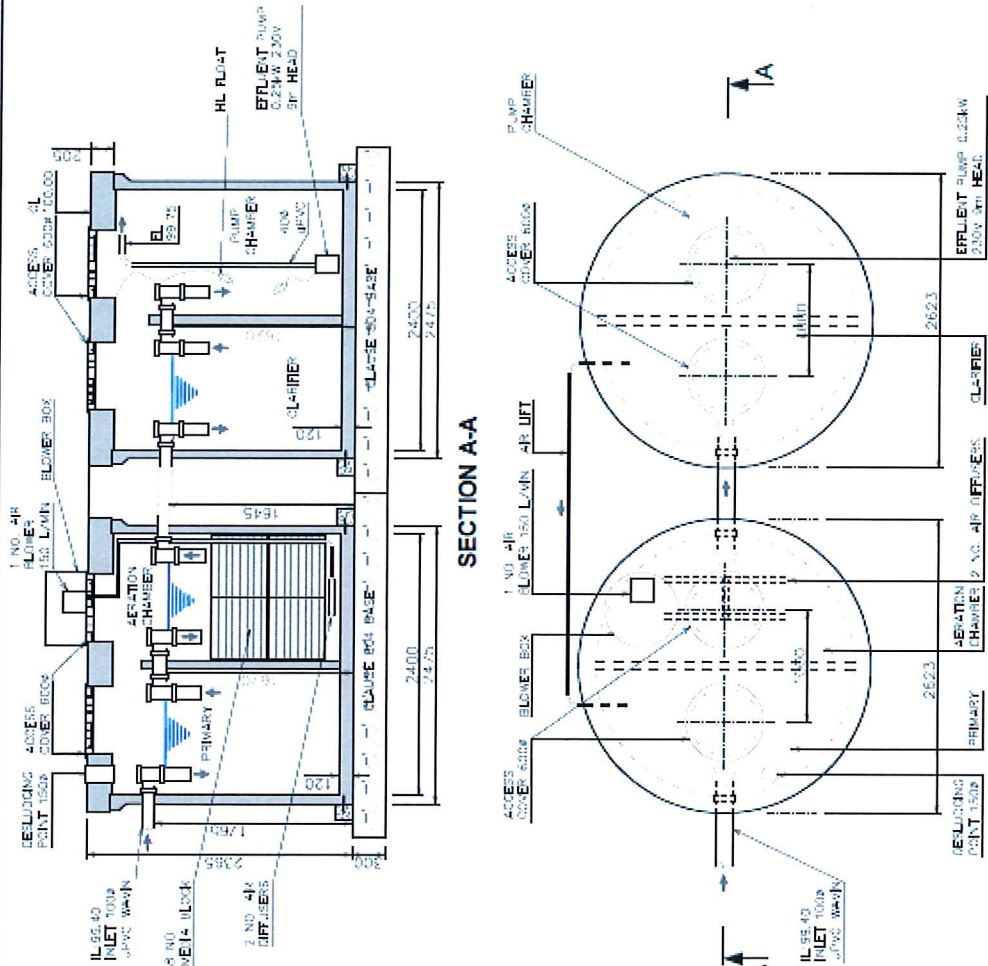






| LEPE          | Working Volume [m <sup>3</sup> ] | Surface Area [m <sup>2</sup> ] | Tank Weight [t] | Lid Weight [t] |
|---------------|----------------------------------|--------------------------------|-----------------|----------------|
| Primary       | 3.5                              | 2.3                            | 5.5             | 2.2            |
| Aeration      | 3.4                              | 2.3                            | 5.5             | 2.2            |
| Clarifier     | 3.4                              | 2.3                            | 5.5             | 2.2            |
| Effluent Pump | 3.4                              | 2.3                            | 5.5             | 2.2            |

1.0kg/m<sup>2</sup> UDL or 1m overladen DL



| REV.                    | DATE       | DESCRIPTION | DRAWING TITLE               | PROJECT   | CLIENT                             |
|-------------------------|------------|-------------|-----------------------------|---|------------------------------------|
| SCALE                   | RTS @ A4   |             | PLANS AND SECTION           | SR 66   | BIOCYCLE                           |
| DATE                    | MARCH 2019 |             |                             |   |                                    |
| DRAWING NUMBER: 314-015 |            |             | POPULATION EQUIVALENT 16 PE | Unit 107 Baldrye Industrial Estate<br>Dublin 13, Ireland<br>Low Call: 1890 525612<br>Tel: 01 8381000<br>Email: info@biocycle.ie | <br>Wastewater Treatment Solutions |



